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NOTEWORTHY LECIDEACEAE FROM KNOX COUNTY, MAINE

[Concluded]

G. K. MERRILL

LECIDEA SYLVICOLA Flot. Lich. Siles. No. 171. (1829).

Thallus effuse, very thin, granulate, commonly dusky-gray, or at times obsolete. Apothecia small, scattered or congregated, black, opaque, plane, with an inconspicuous margin, or convex and immarginate. Spores 8, ellipsoid,  $6-10 \times 3-4.5 \mu$ , hymenium bluish, hypothecium black or dark brown, paraphyses distinct, compacted, the tips dark bluish or greenish.

On mica-schist in unshaded pastures, Rockport; granite and dead wood, So. Thomaston.

Dr. Fink, in Lichens of Minnesota, p. 74, finds it difficult to separate the present from *Biatora myriocarpoides* (Nyl.) Tuck. It is possible to go further and assert that the two species are identical with *Lecidea cyrtidia* Tuck., for it is only occasionally that the latter affords characters making for separation. Dr. Fink states that he finds *Biatora myriocarpoides* occurring on rocks in Minnesota, but that the specimens when submitted to Dr. Hedlund were pronounced representative of *Lecidea sylvicola*. An abandoned granite quarry in So. Thomaston recently furnished to the writer curious evidence of an identity between the two species. On a heap of broken rock covered with *L. sylvicola*, a rotten plank was found that bore in patches over its whole upper surface what, in the absence of the rock lichen beneath, one would call perfectly good *Biatora myriocarpoides*. The two plants were absolutely in agreement both internally and externally. It is, however, very doubtful if *Biatora myriocarpoides* of Tuckerman's Synopsis is in exact agreement with Nylander's *Lecidea myriocarpoides*, and for the present it is preferred to ally the lignicoline So. Thomaston form with the associated *Lecidea sylvicola*.

LECIDEA CRUSTULATA forma GEOGRAPHICA Cromb. Mon. Brit. Lich. Pt. II, p. 71. (1911).

On a rock, Warren, and on ledges, Rockport.

Thallus decussated by dark hypothalline lines, but otherwise not differing from the species. Previously unrecorded for America.

LECIDEA GONIOPHILA (Flk.) Schaer. Enum. p. 127. (1850).

Thallus effuse, leprous, cinereous, or at times subevanescent. Apothecia small, scattered or aggregated, plane or convex, with a thickened and obtuse margin, disk naked and black. Spores 8, ellipsoid,  $10-14 \times 5-9 \mu$ , hypothecium colorless or faintly fuscous, paraphyses distinct, compacted, tips more or less colored and sometimes blackish.

On flat-topped boulders by the roadside, Camden and Warren.

The description of this species is that of *Biatora pungens* Koerb., given by Nylander in Flora 1878, p. 248, as a synonym. *L. goniophila* is reported from Minnesota by Dr. Fink, but the description in his work on the Lichens of Minnesota fails to fit the plant as here affirmed. Dr. Fink states that Hedlund deter-

mined a specimen from Minneapolis, on sandstone, as *L. goniophila*, and a fragment in my herbarium from what is taken to be the locality mentioned, labeled *L. goniophila* and communicated by Dr. Fink, undoubtedly belongs with the species.

LECIDEA (*Buellia*) VERRUCULOSA (Borr.) Schaer. Enum. p. 114. (1850).

Thallus small, orbicular or irregular, verruculose-areolate, the areola more or less scattered toward the circumference, yellowish-green varying to fuscous, K—, C + orange-red. Apothecia immersed in the thalline verrucae, small, disk plane, black. Spores 8, ovoid or ellipsoid, bilocular, brown, 15–21 x 8–11  $\mu$ , hypothecium brown, fuscous or sometimes pale, paraphyses distinct, coherent, brown at the tips, hymenial gel. with I + deep blue.

On rocks in walls and in rock heaps, Rockland.

Apothecia, one in each thalline verruca, and with a spurious thalline border.

Reported from Newfoundland, but I know of no record for the United States. Issued in Lichenes Exsiccati Merrill No. 250.

LECIDEA (*Buellia*) MYRIOCARPA var. PUNCTIFORMIS (Hoffm.) Lamy Mont-Dore, p. 139. (1880.)

On old bricks, Warren, and lignicoline in Thomaston.

Thallus on bricks a filmy sub-dendritic stain. Apothecia very minute. Spores 8, agglutinated, bilocular, ellipsoid, not constricted at the septum, 10–14 x 6–7.5  $\mu$ , hypothecium brownish, asci ventricose, paraphyses distinct, thickened, tips clavate and brown.

Not previously reported from the United States under this combination, but recorded from Newfoundland as *Buellia punctiformis*. Tuckerman made no attempt to differentiate the various forms of the species.

LECIDEA (*Buellia*) TURGESSENS Nyl. in Tuck. Gen. p. 187, and Syn. Pt. II, p. 98. (1888.)

On old clapboards, Rockport.

This is the common condition of the species from a lignicoline substratum. A plant found on white pine in Brunswick, has a conspicuously plicate-verrucose brown thallus and is the finest example of the species yet examined. The thallus is effuse, incrassated centrally, but diminishing in thickness to the filmy-olivaceous border. The apothecia appear as if immersed, due to the turgid thallus. LECIDEA (*Buellia*) ATHALLINA Naeg. MSS ex Dr. Hepp *in litt.* Müller.

Princp. Class. des Lich., Mem. Soc. Phys. Hist. Nat. Genève 16: p. 404. 1862. *Buellia* Müll.

Parasitic, apothecia small, black, opaque, epruinose, with a persistent and rather thin margin. Spores 8, bilocular, from pale to deep brown, 12–13 x 3.5–5  $\mu$ , hypothecium blackish-brown, asci ventricose-clavate, paraphyses distinct but gelatinous, tips clavate and faintly colored.

On thallus of *Baeomyces rufus*, No. Haven.

Answering better to Müller's description than to any found for *L. scabrosa*. The spores in our plant appear not to be constricted at the septum, and are slightly longer and narrower than those of *L. scabrosa*. The paraphyses agree perfectly with Müller's figure. In any broad view the plant is synonymous with *L. scabrosa*.

New by name to the United States.

LECIDEA (*Rhizocarpon*) ALBOATRA var. EPIPOLIA (Ach.) Schaer. Enum. p. 122. 1850.

Thallus whitish, friable and areolate, firm and rimulose, or continuous and unmarked, effuse or limited, destitute of hypothallus in the American specimens examined. Apothecia small, more or less immersed, plane with a thin margin or convex and immarginate, disk black, sometimes bluish or whitish-pruinose. Spores 8, ellipsoid, from one varying to three-septate, and submuriform,  $18-22 \times 7-11 \mu$ , nearly colorless or brown, hypothecium brown, paraphyses distinct, tips clavate and blackish-brown.

On calciferous conglomerate, near the tide water, No. Haven.

The var. *b. saxicola* Fr. is little different, but our plant is without hypothallus.

LECIDEA (*Rhizocarpon*) EUPETRAEA Nyl. Flora 1870, p. 36.

Thallus limited or effuse, granulate-verruculose, thin, the black hypothallus here and there visible, ashy or ashy-fuscous,  $K + >$  dark rusty-red. Apothecia rather small, scattered, commonly slightly convex with a thin persistent margin, black. Spores oblong-ellipsoid, fuscous or decolorate, apparently without halo, muriform, septa irregular,  $20-25 \times 10-14 \mu$ , hypothecium dark-brown, paraphyses and asci gelatinous, epithecium infusate.

On fragmental stones on earth, and rocks of walls, Rockport.

Nylander compares this species externally to *L. petraea*, and Hue, in Adenda, to *L. parapetraea*. It is unlike the common states of *L. confervoides* from this region in color and conditioning of the thallus, but is analogous in color and granulated crust to one form of *L. concentrica*. The species is reported from Miquelon, Hue; and from Labrador, Arnold. In Eckfeldt's Newfoundland and Labrador list it is noted as *L. empetraea*, and in Macoun's Canadian list the spelling is again incorrect. New to the United States.

**Lecidea** (*Rhizocarpon*) **confervoides** forma **dispersa** (Leight.) comb. nov.

*L. petraea* f. *dispersa* Leight. Lich. Fl. G. Brit. Ed. III, p. 376.

On ledges, Rockport.

Hypothallus conspicuous, the thalline areolae scattered and ashy. Apothecia seated on the hypothallus. *L. confervoides* is in part *Buellia petraea* of Tuckerman's Synopsis. Unnoticed in American lists.

LECIDEA (*Rhizocarpon*) OBSCURATA (Ach.) Schaer. Spiclg. p. 130. 1828.

Thallus grayish, thin, areolate, the areolae small and never discrete in our specimens, plane,  $K +$  faint,  $C -$ , hypothallus black but not always visible. Apothecia small to medium, innate-sessile, plane or slightly concave, disk black with a rather thickened obtuse margin. Spores variable in number, oblong ellipsoid, colorless or fuscous, muriform, halonate,  $26-45 \times 13-20 \mu$ , hypothecium gel. with  $I +$  deep blue.

On rocks in bed of a stream, but mostly about its margins, Camden.

A curious feature of the Knox Co. specimens is the often concentric arrangement of the apothecia, exactly in the manner of *L. concentrica*.

The plant is noticed in Macoun's Canadian list, and in the Newfoundland catalogue of Eckfeldt. Dr. Fink records it from Minnesota, but I find no other record for the United States.

LECIDEA OBSCURATA forma FERRATA Nyl. Scand. p. 234. (1861.)

Like the species in all except color. The thallus is rusty-red, and the apothecia are likewise suffused.

On submerged rocks in a stream, and rarely about its borders, Camden.

Apothecia concentrically disposed. The plant when wet is of a brighter color than in its dried state, and is a rarely pretty object. Unreported from America.

LECIDEA (*Rhizocarpon*) AMPHIBIA Fr. Vet. Ak. Handl. 1822. p. 262.

Thallus verrucose-areolate, the areolae contiguous, bluish-cinereous K—, C— hypothallus obsolete. Apothecia at first immersed, but becoming emergent, small or medium, disk black, plane or more commonly convex with a thin persistent margin. Spores various in number, oblong or oblong-ellipsoid, from rarely three-septate commonly muriform, colorless or fuscous, more or less halonate,  $26-36 \times 13-16 \mu$ , hypothecium brownish or nigrescent, paraphyses confused, tips variously yellowish or violet, hymenial gel. with I + intense blue.

On schistose rocks, summit of Ragged Mt., alt. 1400 ft., Rockport. In our plant the apothecia are concentrically disposed. The specimen was not found near a stream or lake, such being the habitat given for the species in Europe, but on a bare ledge having a southern exposure. Curiously *L. obscurata*, not particularly a water-loving plant, is here noted as inhabiting brooks, while the present, given a name for its predilection for a moist home, is found where the only moisture is derived from rains and fogs. The determination is certain, however. In our specimens the spores are muriform, colorless, and in four's. No record is found for the United States.

LECIDEA (*Rhizocarpon*) LAVATA (Ach.) Nyl. Flora. 1873. p. 13.

Thallus thin, continuous and rimulose or somewhat diffract-areolate fusco-cinereous, K—, C—. Apothecia depressed, typically innate, circumscribed, concave, with an elevated and persistent margin, or the disk plane and margin subevanescent, black. Spores 8, oblong-ellipsoid, muriform, colorless, faintly halonate,  $33-35 \times 11-15 \mu$ , hypothecium brownish or fuscous, paraphyses distinct but gelatinous.

On granite and quartz rock, So. Thomaston.

The species is also identified in material from Vancouver Island collected by Mr. J. Macoun.

LECIDEA (*Rhizocarpon*) ALPICOLA (Wahl., Schaer.) Nyl. in Act. Soc. Linn.

Bord. ser. 3, I., p. 388. 1856.

On granite, Ragged Mt., Rockport, alt. 1,100 ft.

This species is wholly inseparable from *L. geographica* except by its spores, and the Sporologists notwithstanding, belongs in the same section of *Lecidea*. It is unknown in the United States except from a Nevada station, and from the higher summits of the White Mountains of New Hampshire. Tuckerman states that the thallus is coarser than is that of *L. geographica*, and that the apothecia are detrued. Our plant is certainly coarser than the *L. geographica* of our region, but curiously less coarse than many examples of *L. geographica* collected on the summit of Mt. Washington, and the fruit is not markedly detrued.

ROCKLAND, MAINE.